MTHRTL

FILEID**MTHIIDNNT

```
MM        MM  TTTTTTTTTT  HH      HH   IIIIII    IIIIII   DDDDDDD   NN      NN  NN      NN  TTTTTTTTTT
MM        MM  TTTTTTTTTT  HH      HH   IIIIII    IIIIII   DDDDDDD   NN      NN  NN      NN  TTTTTTTTTT
MMMM    MMMM      TT      HH      HH     II         II    DD    DD  NN      NN  NN      NN      TT
MMMM    MMMM      TT      HH      HH     II         II    DD    DD  NN      NN  NN      NN      TT
MM  MM  MM        TT      HH      HH     II         II    DD    DD  NNNN    NN  NNNN    NN      TT
MM  MM  MM        TT      HH      HH     II         II    DD    DD  NNNN    NN  NNNN    NN      TT
MM        MM      TT      HHHHHHHHHH     II         II    DD    DD  NN NN   NN  NN NN   NN      TT
MM        MM      TT      HHHHHHHHHH     II         II    DD    DD  NN  NN  NN  NN  NN  NN      TT
MM        MM      TT      HH      HH     II         II    DD    DD  NN   NNNN   NN   NNNN       TT
MM        MM      TT      HH      HH     II         II    DD    DD  NN    NNNN  NN    NNNN      TT
MM        MM      TT      HH      HH     II         II    DD    DD  NN      NN  NN      NN      TT
MM        MM      TT      HH      HH     II         II    DD    DD  NN      NN  NN      NN      TT
MM        MM      TT      HH      HH   IIIIII    IIIIII   DDDDDDD   NN      NN  NN      NN      TT
```

```
LL             IIIIII   SSSSSSS
LL             IIIIII   SSSSSSS
LL               II    SS
LL               II    SS
LL               II    SS
LL               II    SS
LL               II     SSSSS
LL               II     SSSSS
LL               II         SS
LL               II         SS
LL               II         SS
LL               II         SS
LLLLLLLLLL     IIIIII   SSSSSSS
LLLLLLLLLL     IIIIII   SSSSSSS
```

....
....
....
....

```
0000     1              .TITLE  MTH$IIDNNT - Nearest Integer
0000     2              .IDENT  /2-001/        ; File: MTHIIDNNT.MAR
0000     3
0000     4      ;
0000     5      ;******************************************************************
0000     6      ;*                                                                *
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0000    24      ;*                                                                *
0000    25      ;*                                                                *
0000    26      ;******************************************************************
0000    27
0000    28
0000    29      ; FACILITY: MATH LIBRARY
0000    30      ;++
0000    31      ; ABSTRACT:
0000    32      ;
0000    33      ;
0000    34      ;--
0000    35      ;
0000    36      ; VERSION: 1
0000    37      ;
0000    38      ; HISTORY:
0000    39      ;
0000    40      ; AUTHOR:
0000    41      ;       Jonathan M. Taylor, 28-Jul-77: Version 0
0000    42      ;
0000    43      ; MODIFIED BY:
0000    44      ;
0000    45      ;       Steven B. Lionel, 19-Feb-79: Version 2
0000    46      ;
0000    47      ;
```

```
                0000   49              .SBTTL  HISTORY              ; Detailed Current Edit History
                0000   50
                0000   51
                0000   52 ; Edit History for Version 1 of MTH$IIDNNT
                0000   53 ;
                0000   54 ; 0-2   - Remove MTH$FLAG_JACKET.  TNH 5-July-78
                0000   55 ; 1-001 - Update version number and copyright notice.  JBS 16-NOV-78
                0000   56 ; 1-002 - Add " " to the PSECT directive.  JBS 22-DEC-78
                0000   57 ; 1-003 - Make it work for negative values and add IV to entry mask.
                0000   58 ;           SBL 06-Feb-79
                0000   59 ; 2-001 - Change to CVTRDL.  SBL 19-Feb-1979
```

MTH$IIDNNT
2-001

K 14

- Nearest Integer
DECLARATIONS

16-SEP-1984 01:41:50   VAX/VMS Macro V04-00   Page 3
6-SEP-1984 11:25:56   [MTHRTL.SRC]MTHIIDNNT.MAR;1   (3)

```
        0000        61              .SBTTL  DECLARATIONS
        0000        62
        0000        63  ;
        0000        64  ; INCLUDE FILES:
        0000        65  ;
        0000        66
        0000        67  ;
        0000        68  ; EXTERNAL SYMBOLS:
        0000        69  ;
        0000        70
        0000        71  ;
        0000        72  ; MACROS:
        0000        73  ;
        0000        74
        0000        75  ;
        0000        76  ; PSECT DECLARATIONS:
    00000000        77              .PSECT  _MTH$CODE       PIC, SHR, LONG, EXE, NOWRT
        0000        78
        0000        79  ;
        0000        80  ; EQUATED SYMBOLS:
        0000        81  ;
        0000        82
        0000        83  ;
        0000        84  ; OWN STORAGE:
        0000        85  ;
```

```
                          0000      87              .SBTTL  MTH$IIDNNT - return nearest integer as INTEGER*2
                          0000      88
                          0000      89    ;++
                          0000      90    ; FUNCTIONAL DESCRIPTION:
                          0000      91    ;
                          0000      92    ;      MTH$IIDNNT returns as its function value the INTEGER*2
                          0000      93    ;      integer nearest to its REAL*8 argument, rounded away from
                          0000      94    ;      zero.
                          0000      95    ;
                          0000      96    ; CALLING SEQUENCE:
                          0000      97    ;
                          0000      98    ;      nearest_integer.ww.v = MTH$IIDNNT (arg.rd.r)
                          0000      99    ;
                          0000     100    ; INPUT PARAMETERS:
                          0000     101    ;      arg     - REAL*8 argument
                          0000     102    ;
                          0000     103    ; IMPLICIT INPUTS:
                          0000     104    ;      NONE
                          0000     105    ;
                          0000     106    ; OUTPUT PARAMETERS:
                          0000     107    ;      NONE
                          0000     108    ;
                          0000     109    ; IMPLICIT OUTPUTS:
                          0000     110    ;      NONE
                          0000     111    ;
                          0000     112    ; FUNCTION VALUE:
                          0000     113    ;      nearest_integer - trunc(arg + .5*sign(arg))
                          0000     114    ;
                          0000     115    ; SIDE EFFECTS:
                          0000     116    ;      Reserved operand and integer overflow exceptions may occur.
                          0000     117    ;
                          0000     118    ;--
                          0000     119
                          0000     120
                          0000     121
                          0000     122
                  4000    0000     123              .ENTRY  MTH$IIDNNT,      ^M<IV>
      50    04 BC   6B    0002     124              CVTRDL  @4(AP), R0                ; R0 gets rounded argument
         50  50    F7     0006     125              CVTLW   R0, R0                    ; R0 gets INTEGER*2
                    04    0009     126              RET
                          000A     127
                          000A     128
                          000A     129              .END
```

MTH$IIDNNT   00000000 RG   01

```
                                        +------------------+
                                        ! Psect synopsis !
                                        +------------------+


PSECT name                      Allocation       PSECT No.  Attributes
----------                      ----------       ---------  ----------
.  ABS  .                       00000000 (    0.)  00 (  0.)  NOPIC  USR  CON  ABS  LCL  NOSHR  NOEXE  NORD  NOWRT  NOVEC  BYTE
_MTH$CODE                       0000000A (   10.)  01 (  1.)  PIC    USR  CON  REL  LCL  SHR    EXE    RD    NOWRT  NOVEC  LONG

                                     +----------------------------+
                                     ! Performance indicators !
                                     +----------------------------+


Phase                    Page faults     CPU Time      Elapsed Time
-----                    -----------     --------      ------------
Initialization                   30      00:00:00.08   00:00:01.19
Command processing              107      00:00:00.45   00:00:03.76
Pass 1                           65      00:00:00.34   00:00:02.61
Symbol table sort                 0      00:00:00.00   00:00:00.02
Pass 2                           37      00:00:00.35   00:00:01.72
Symbol table output               1      00:00:00.00   00:00:00.00
Psect synopsis output             3      00:00:00.02   00:00:00.02
Cross-reference output            0      00:00:00.00   00:00:00.00
Assembler run totals            245      00:00:01.25   00:00:09.33
```

The working set limit was 900 pages.
1223 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 1 non-local and 0 local symbols.
129 source lines were read in Pass 1, producing 10 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

```
                                     +----------------------------+
                                     ! Macro library statistics !
                                     +----------------------------+


Macro library name                      Macros defined
------------------                      --------------
_$255$DUA28:[SYSLIB]STARLET.MLB;2              0
```

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS$:MTHIIDNNT/OBJ=OBJ$:MTHIIDNNT MSRC$:MTHIIDNNT/UPDATE=(ENH$:MTHIIDNNT)

MTHIISIGN
LIS

MTHHFLOOR
LIS

MTHHSIGN
LIS

MTHHMIN1
LIS

MTHHLOG
LIS

MTHHTAN
LIS

MTHIIDNNT
LIS

MTHIIHNNT
LIS

MTHHSQRT
LIS

MTHIMAX0
LIS

MTHHNINT
LIS

MTHHSINH
LIS

MTHHTANH
LIS

MTHHINT
LIS

MTHHMAX1
LIS

MTHHSINCO
LIS

MTHHMOD
LIS

MTHIIGNNT
LIS